RECEIVED
CENTRAL FAX CENTER 001/038

AUG 16 2006

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, Colorado 80527-2400

PATENT APPLICATION

ATTORNEY DOCKET NO. 300200286-3

IN THE
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Stephen John HINDE

Confirmation No.: 2259

Application No.: 10/058,229

Examiner: Justin I. MICHALSKI

Filing Date: January 29, 2002

Group Art Unit: 2644

Title: AUDIO USER INTERFACE

Mail Stop Appeal Brief-Patents
Commissioner For Patents
PO Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPEAL BRIEF

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on June 16, 2006.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) $500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

☐ (a) Applicant petitions for an extension of time under 37 CFR 1.136 (fees: 37 CFR 1.17(a)-(d)) for the total number of months checked below:

☐ 1st Month $120	☐ 2nd Month $450	☐ 3rd Month $1020	☐ 4th Month $1590

☐ The extension fee has already been filed in this application.

☒ (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

Please charge to Deposit Account 08-2025 the sum of $ 500. At any time during the pendency of this application, please charge any fees required or credit any over payment to Deposit Account 08-2025 pursuant to 37 CFR 1.25. Additionally please charge any fees to Deposit Account 08-2025 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees. A duplicate copy of this sheet is enclosed.

☐ I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:
Commissioner for Patents, Alexandria, VA 22313-1450
Date of Deposit:

OR

☒ I hereby certify that this paper is being transmitted to the Patent and Trademark Office facsimile number (571)273-8300.
Date of facsimile: August 16, 2006
Typed Name: Melissa Satorre
Signature:

Respectfully submitted,
Stephen John HINDE
By
Allan M. Lowe
Attorney/Agent for Applicant(s)
Reg No. : 19,641
Date : August 16, 2006
Telephone : 703-535-7051

Rev 10/05 (ApiBrief)

RECEIVED
CENTRAL FAX CENTER
AUG 16 2006

Docket No. 300200286-3 US (1509-266) PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of	
Inventors: Stephen John HINDE	: Confirmation No. 2259
	:
U.S. Patent Application No. 10/058,229	: Group Art Unit: 2644
	:
Filed: January 29, 2002	: Examiner: Justin I. MICHALSKI
	:
For: AUDIO USER INTERFACE	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Attn: BOARD OF PATENT APPEALS AND INTERFERENCES

BRIEF ON APPEAL

Further to the Notice of Appeal filed June 16, 2006, in connection with the above-identified application on appeal, herewith is Appellant's Brief on Appeal. The Commissioner is authorized to charge Deposit Account No. 08-2025 in the amount of $500 for the statutory fee.

To the extent necessary, Appellant hereby requests any required extension of time under 37 C.F.R. §1.136 and hereby authorizes the Commissioner to charge any required fees not otherwise provided for to Deposit Account No. 08-2025.

08/17/2006 MBINAS 00000053 082025 10058229
01 FC:1402 500.00 DA

TABLE OF CONTENTS

I. Real Party in Interest

The real party in interest is Hewlett Packard Development Company, L.P., a Texas limited partnership.

II. Related Appeals and Interferences

There are no related appeals and/or interferences.

III. Status of Claims

No claims are allowed.

Claims 20, 29 and 37-39 are canceled.

Claims 1-3, 5-19, 21-23, 25-43 and 45-48 are rejected as being anticipated by Schmandt article entitled "Audio Hallway: a Virtual Acoustic Environment for Browsing." Claims 4, 24 and 44 are rejected as being obvious under 35 U.S.C. 103(a) as a result of Schmandt.

IV. Status of Amendments

An amendment to cure some formal matters of claims 3, 16 and 21, objected to in the Final Rejection is submitted herewith. The enclosed amendment also cancels claims 37-39 because of antecedent problems. This Brief, including the claims appendix, is prepared on the assumption that this amendment will be entered.

V. Summary of Claimed Subject Matter

The subject matter of method claim 1 and independent apparatus claim 41, as well as independent apparatus claim 21 that is framed in means plus function language for many of the limitations, is directed to using audio for enabling a user to interface with services that are represented by different synthesized sound sources 40, Figures 2 and 4-8 (page 1, lines 4 and 5, lines 25-30, page 16, lines 19-21, page 17, lines 5-8, 15-17, page 18, lines 4-21, lines 26-29). The services represented by sound sources 40 can be communication services, such as e-mail, voicemail, faxes, phone messages, and entertainment services, such as radio programs, information resources, such as databases obtained from a search engine (page 7, lines 14-18). Each service is associated with a label that identifies the service, in the form of a service name, short mental description, characteristic sound or jingle or a low-level audio feed from the service, (page 7, line 22-25). The labels appear to emanate from the same positions 40 as the services.

Memory 14 of subsystems 13 stores identification (label) and access data for each of the services (page 11, line 22- page 12, line 2). The access data is, for example, the address of the service to be executed or a starting URL (page 11, lines 26-32), features defined by dependent claims 6 and 7. Memory 14 also stores indications of the position of sound sources 40 (page 13, lines 28-30).

The identification labels, positions of sources 40 and types of services stored in memory 14 are supplied to unit 23, Figure 1, that modifies positions of sources 40 i.e.,

the audio field layout of the label and service representing sound sources based on the location of a user, as indicated, for example, by GPS, if real-world location processing module 21 is used (page 13, lines 26-28, page 13, line 31- page 14, line 1). In addition, unit 23 can respond to a user input to modify the positions of sources 40, for example, by a key pad, keyboard, voice recognition unit or interactive display (page 13, lines 3-7). The modified positions are supplied to memory 25.

The apparent positions of sources 40 can also be modified in response to the movement of the head of the user as determined by head tracker 33, or by other user inputs 28 (page 14, lines 30 – page 15, line 6) that modify the orientation of the field including sources 40 in block 26, having an output that is supplied to field orientation memory 29. The thus modified field orientation and source position signals are combined in combiner 30, that drives memory 15 that stores the identification, i.e., label, associated with each service and the rendering (i.e. apparent) position of each source 40 (page 15, lines 16- 18, page 23, lines 18-22).

Memories 14 and 15 supply signals to spatialization processor 10 that drives audio output devices 11, to enable the audio output devices to render each sound source 40 at its final operating position (page 15, line 30 – page 16, line 2). Audio output devices 11 are, for example, headphones, fixed speakers or vehicle sound system output devices (page 10, lines 8, 9, 23 and 28-31).

Spatialization processor 10 responds to output selection unit 12 so that audio output devices 11 are selectively supplied with (1) the labels, i.e., identifications of the

services, and (2) the full service associated with the labels (page 15, line 22 – page 16, line 15). Output selection device 12 responds to a user input so that processor 10 operates (1) in a desk top mode, during which the labels at locations 40 are spatialized and supplied to audio output device 11, or (2) in the full service mode, in which all of the message associated with a particular location 40 is supplied by processor 10 to audio output device 11. Thus, in the desktop mode, the audio identification labels for the sources at positions 40 are supplied to the user by audio output device 11, at positions determined by memory 14 and modifier units 23 and 26. When the user decides he wants to obtain greater information about a particular service, he supplies an input to output selection device 12 to switch processor 10 from the desktop mode to the full service mode, during which the entire message associated with a particular service is supplied by memory 14 or 15 to the user by audio output device 11 (page 7, lines 20-25, page 8, lines 6-10).

Claim 21 requires:

rendering means for generating, through audio output devices, an audio field in which said sound sources are synthesized at respective rendering positions to provide sounds for their associated service-representing audio labels and thereby present the user with a choice of services;

This means plus function limitation is discussed at page 13, lines 28-30 that indicates a portion of memory 14 (Figure 1) stores location information for sound sources 40. Sources 40 can be located on a spherical surface (page 8, lines 25-page

9, line 1), a cylindrical surface (page 17, lines 16, 17) (the spherical and cylindrical surfaces are two dimensional constraints for the position of sources 40) or with three degrees of freedom (page 9, lines 8-10), or on the perimeter of a circle defined by a plane of the spherical surface (page 9, lines 10-12).

In the modification of Figure 18, speech recognizer 150 determines when a user is speaking a sound label of a sound source, to control switching of processor 10 from the desktop mode to the selected full service audio mode (page 43, lines 17-19 and page 43, line 29 – page 44, line 2). Hence, in response to the user speaking an audio label, i.e., identification of a target service, the speech recognizer matches the spoken label to the audio labels stored in memory 14, as defined by dependent claims 4 and 44 that respectively define details of the selecting step and subsystem of method claim 1 and apparatus claim 41. Claim 24 defines speech recognizer 150 for performing this function (discussed at page 43, lines 17-19 and page 43, line 29 – page 44, line 2) in means plus function language by requiring the selection means of claim 21 to include speech input means for recognizing an audio label spoken by the user and selecting the corresponding service.

An alternative selection method, defined by claim 3, is performed with a cursor sound source including cursor control input device 140 (Figure 18, page 39, line 23), having an output that controls movement of an audio cursor in the audio fields associated with the identification labels. In response to the audio cursor sound being aligned with the sound of a target service, the service selected, i.e., the sound emitted

from the source 40 that is aligned with the audio cursor, switches from the identification label to the service representing sound source (page 41, lines 16-18).

Claim 23 defines the cursor control input device 140 that performs the foregoing operation in means plus function language by requiring the selection means of claim 21 to include means for moving an audio-cursor sound source in the audio field to align the audio-cursor sound source with the sound source of a target service. In addition, claim 23 calls for means for inputting a select command to select a service with which the sound source is aligned, a function that is also performed by input device 140 (page 41, lines 20 and 21). Page 40, lines 22-25 indicates that in response to the user activating input device 140 a signal on line 142 causes mode and source control block 128 to access memory 15 to determine which sound source has its selection parameter set to "true". Such a determination is made before switching the apparatus from its desk top mode to its full service mode.

Claim 21 also includes the limitation:

selection means for selecting a represented service by indicating the represented service through its audible representation.

The selection means of claim 21 involves structure for switching processor 10 in each of Figures 1, 9, 10, and 18 from the desktop mode (during which audio output devices 11 are responsive to the labels), to the full service mode (during which audio output devices 11 are responsive to the entire message associated with the labels as described at page 7, lines 20-25, page 8, lines 6-18, page 15, line 22, page 16, line 15,

page 38, lines 22-24, page 41, lines 23-25, page 43, lines 17-19. Various alternate structures of appellants' specification that perform this function are: (1) output selection device 12 (Figure 1), described at page 7, lines 20-25, page 8, line 6-10, page 15, line 22-page 16, line 15; (2) speech recognizer 150 and memory 152 (Figure 18), described at page 43, line 17-19 and page 43, line 29-page 44, line 2; (3) sound cursor control input device 140, audio cursor current position calculator 141, memory 144 that is responsive to the output of calculator 141, sound cursor setter 145 that compares the cursor position with the positions of sources 40 so that when the cursor and the sound sources are aligned the service associated with source 40 is sounded, described in connection with Figure 18 at page 37, line 13, page 39, line 19-page 40, line 18; (4) selection-direction comparison unit 137 that detects directional alignment of the user facing direction and the sound source, as determined by a rotation displacement commanded by input device 136; unit 137 emits a sound in response to alignment, as described in connection with Figure 18 at page 37, lines 11 and 12, page 37, line 18-page 38, line 12.

Claims 6 and 26 require the access data of the service to be the path name on a local machine of a service file to be executed (page 11, lines 23, 24, page 58, lines 30, 31), while claims 7 and 27 require the access data of a service to be the address of a service resource on a remote machine to be accessed over a communications connection (page 11, lines 23, 24, page 59, lines 1-3).

Claim 9 requires the rendering positions of the sound sources 40 to be specified in the audio field with at least two degrees of freedom, e.g. on spherical or cylindrical surfaces or with three full degrees of freedom (page 8, line 25, page 9, line 1, page 9, lines 8-10, page 14, line 19-22, page 17, lines 15-17, page 18, lines 17, 18, Figs 2, and 4-8).

As defined by claim 17, upon which claims 18 and 19 depend, field orientation modifier block 26, Figure 1, varies the apparent positions of sound sources 40 by varying an offset between audio field reference 42 (Figures 2-5) relative to presentation reference 44 (page 14, lines 30-32, page 14, lines 6-14). The presentation reference 44 is determined by the mounting configuration of audio output devices 11 (page 14, lines 8-11).

Claim 21 defines:

user input means for enabling a user to modify the audio-field layout of the service-representing sound sources and/or what services are represented in the audio field.

There are several structures in appellants' specification that read on this means plus function limitation.

The user can modify the audio-field layout of the service-representing sound source by any one of: (1) source-position set/modifying block 23 (Figure 1) that (a) includes real-world application processing block 21 that responds to user location input 23, as discussed at page 13, lines 26-32, page 24, lines 24-27, or (b) responds to user

inputs 24 from a keypad, keyboard, voice-recognition unit or interactive display, as described at page 13, lines 6, 7; (2) field orientation modifier block 26 (Figure 1) that responds to head tracker 33, as described at page 14, line 30-page 15, line 6; (3) adjusting cylinder filter 71 (Figure 9) so that some of sources 40 are muted, as described at page 20, line 25-page 21, line 7, page 21, lines 26-32; (4) source parameter set/modifying block 70 (Figure 10) that rotates or vertically re-positions independent sound-fields by changing the offset between presentation reference vector 44 (Figure 2) and audio field reference vector 42, as described at page 22, line 22-page 23 line 13.

Alternatively or additionally, claim 21 requires user input means for enabling a user to modify what services are represented in the audio field. This means plus function limitation is disclosed at page 12, lines 2-5 that indicates memory 14 can be arranged so that the audible label associated with a particular service sound source can be temporarily replaced (thus, modified) with a notification of a significant service-related event. For example, if the service is an e-mail service, the e-mail service can be temporarily replaced by a notification of receipt of an e-mail message.

Claims 10-14 and 30-34 require the audio label to be a verbal service name or description (claims 10, 30), (page 59, lines 18, 19), (2) an audio feed from a concerned service (claims 14 and 34), (page 59, lines 21, 22), (3) a distinctive sound or sound sequence (claims 12 and 32), (page 59, lines 24, 25), (4) user specified (claims 13 and

33), (page 59, lines 27) or (5) provided by the corresponding source (claims 14 and 34), (page 59, lines 29, 30).

Grounds of Rejection to be Reviewed on Appeal

A. **Independent claims 1, 21 and 41 are not anticipated by Schmandt because they require, *inter alia*, storing, for each service to be represented, data specifying at least one audio label and generating an audio field in which sound sources are synthesized at respective rendering positions to sound their associated service-representing audio labels.**

B. **Claim 21 is cast to include "rendering means for generating an audio field", "selection means for selecting a represented service", "user input means for enabling a user to modify the audio field layout and/or services" limitations that are covered by 35 U.S.C. 112, paragraph 6, and therefore require the Examiner to provide a showing in the Schmandt reference of the corresponding structure described in appellants' specification or equivalents thereof, requirements the Examiner has not fulfilled.**

C. **Schmandt does not disclose the requirements of claims 3 and 23 for an audio-cursor sound source to be moved in an audio field so the cursor sound source is aligned with the sound source of a target service.**

D. **Schmandt does not disclose the requirement of claim 6 for the access data of the service to be the path name on a local machine of a service executable file.**

E. **Schmandt does not disclose the requirement of claims 7 and 27 for the access data of the service to be the address of a service resource on a remote machine to be accessed over a communications connection.**

F. **Schmandt does not disclose the requirement of claim 9 for the rendering positions of the sound sources to be specified in an audio field with at least two degrees of freedom.**

G. **Schmandt does not disclose the requirements of claims 10-14 and 30-34 for the audio label to be a verbal service name or descriptor, an audio feed from a concerned service, a distinctive sound or sound sequence, to be user specified, or to be provided by a corresponding service because Schmandt does not disclose an audio label.**

H. Schmandt does not disclose the requirements of claim 17, for an offset to be varied between an audio-field reference relative to which sound sources are positioned in an audio field and a presentation reference determined by a mounding configuration of audio output devices through which sound sources are synthesized.

I. Schmandt does not make obvious selecting a service as a result of a user speaking an audio label of a target service and using a speech recognizer to match the spoken label to stored audio labels, as dependent claims 4, 24, and 44 require.

VI. Argument

A. Independent claims 1, 21 and 41 are not anticipated by Schmandt because they require, *inter alia*, storing, for each service to be represented, data specifying at least one audio label and generating an audio field in which sound sources are synthesized at respective rendering positions to sound their associated service-representing audio labels.

The Final Rejection states that Schmandt discloses an audio user-interfacing method and apparatus for which services are represented by audio labels and that for each service to be represented, at least one audio label is identified. The Final Rejection states such features are found in Figure 5 of Schmandt. Figure 5 of Schmandt merely includes an illustration of (1) a person looking forward and (2) individual sound files in a particular room, as represented by nine different disks. The disks are stated to be situated around an equal distance from the head of the individual, in a plane parallel to the ground. The text, in the last full paragraph on page 167 and the paragraph bridging pages 167 and 168, indicates that four of the files play simultaneously, based on the angle of rotation of the head of the person depicted in

Figure 5 in the "ground playing." Apparently the words "ground playing" refer to a plane parallel to the ground. The sounds play simultaneously to facilitate browsing of the files, because the listener can simply change attention between the files without any need for additional head motion. Fading in and out of neighboring sounds with head rotation helps to convey a spatial model of an ordered array of sounds about the head of the user. The paragraph bridging pages 167 and 168 discusses a "lens" effect of Figure 6, so that the sound file most directly in line with the head of the user is louder than the other files to aid in the selection process.

There is simply no disclosure in the relied upon portion of Schmandt of storing, for each service to be represented, data specifying at least one audio label. Further, Schmandt has no disclosure of generating an audio field in which sound sources are synthesized at rendering positions to sound their associated service-representing audio labels. Claims 1, 21 and 37 indicate the service can be selected through its audio representation that includes the audio label, a feature Schmandt does not disclose.

B. Claim 21 is cast to include "rendering means for generating an audio field", "selection means for selecting a represented service", "user input means for enabling a user to modify the audio field layout and/or services" limitations that are covered by 35 U.S.C. 112, paragraph 6, and therefore require the Examiner to provide a showing in the Schmandt reference of the corresponding structure described in appellants' specification or equivalents thereof, requirements the Examiner has not fulfilled.

The Examiner has made no attempt to show how Schmandt includes a structure corresponding to the structure set forth in appellant's specification for the rendering means, the selection means and the user input means of claim 21. Since the rendering means and selection means of claim 21 are to be interpreted in accordance with 35 U.S.C. 112, paragraph 6, the Examiner has the burden of showing where Schmandt discloses the rendering means, the selection means and user input means (previously described in the Summary of the Claimed Subject Matter portion of this Brief) that corresponds with the structure disclosed in the appellants' specification or equivalents thereof. Hence, the Examiner has not attempted to establish a prima facie case of anticipation with regard to the various means plus function limitations of claim 21.

C. Schmandt does not disclose the requirements of claims 3 and 23 for an audio-cursor sound source to be moved in an audio field so the cursor sound source is aligned with the sound source of a target service.

The Final Rejection alleges Figure 6 and the paragraph bridging pages 167 and 168 of Schmandt disclose the requirement of claims 3 and 23 for moving an audio-

cursor sound source in the audio field so the audio-cursor sound source is aligned with the sound source of a target service. Figure 6 indicates the apparent position of three sounds highlighted in Figure 5, as rendered through a lens. The caption next to the figure indicates that the sound represented by the center of the three sounds is the loudest, i.e., has the highest playback amplitude. Because Fig. 6 and the paragraph bridging pages 167 and 168 of Schmandt have nothing to do with a cursor, claims 3 and 23 are not anticipated.

Claim 23 is cast in means plus function language, requiring the selection means of claim 21 to include means for moving an audio-cursor sound source in an audio field to align the cursor sound source with the sound source of a target service. Appellants, in Section V. of this Brief, have indicated the structure in Figure 18 that is concerned with means for generating and moving an audio-cursor sound source. The Examiner has made no attempt to show that the Schmandt reference has a disclosure of the corresponding structure applicant uses to provide this means plus function limitation. Consequently, the Examiner has failed to establish a prima facie case of anticipation with regard to claim 23.

D. Schmandt does not disclose the requirement of claims 6 and 26 for the access data of the service to be the path name on a local machine of a service executable file.

Claims 6 and 26 require the accessed data of the service to be the path name on a local machine of a service executable file. The Examiner alleges this feature is

found in the first full paragraph on page 169 of Schmandt. However, the first full paragraph on page 169 of Schmandt describes the hardware that is used to implement the technique Schmandt discloses. For example, the paragraph describes the server that is used in connection to implement the Schmandt technique and indicates that audio samples from separate sound file are merged into a stereo audio byte stream for playback. While the paragraph also describes the sensor that is used for monitoring head position and indicates the head position sensor is mounted on headphones of a user, nothing is mentioned about accessed data from the room described in connection with Figures 5 and 6.

E. Schmandt does not disclose the requirement of claims 7 and 27 for the access data of the service to be the address of a service resource on a remote machine to be accessed over a communications connection.

The Final Rejection alleges that the paragraph bridging pages 168 and 169 meets the requirements of claims 7 and 27 for access data of the service to be the address of a service resource on a remote machine to be accessed over a communications connection. The paragraph bridging page 168 and 169 of Schmandt describes the "rather sprawling distributed architecture" of the system Schmandt uses to implement his technique. It has nothing to do with service access data that are stored for each service to be represented by audio labels presented in an audio field.

The statement in the first full paragraph on page 4 of the Final Rejection that a computer inherently includes communication connections to access data is true.

However, such a statement is irrelevant with regard to claims 7 and 27 that relate to the service access data for each service presented in an audio field through synthesized sound sources.

F. Schmandt does not disclose the requirement of claim 9 for the rendering positions of the sound sources to be specified in an audio field with at least two degrees of freedom.

The allegation that Figure 5 of Schmandt discloses the requirements of claim 9 for the sound sources to be specified in the audio field with at least two degrees of freedom is incorrect. Figure 5 clearly indicates the synthesized sound sources are in a single plane at different angles. There is no indication the sound sources are at different distances from the illustrated person.

G. Schmandt does not disclose the requirements of claims 10-14 and 30-34 for the audio label to be a verbal name or descriptor, an audio feed from a concerned service, a distinctive sound or sound sequence, to be user specified or to be provided by a corresponding service because Schmandt does not disclose an audio label at all.

Claims 10-14 and 30-34 are directed to specific audio labels. As previously discussed, Schmandt does not disclose audio labels as set forth in independent claims 1 and 21. The rejection of claims 10, 11, 30 and 31 refers to page 164 of Schmandt. However, page 164 of Schmandt has nothing to do with sound selection within a room, as described in connection with Figure 5. Instead, page 164 is concerned with the Audio Hallway. The discussion of claims 12 and 32 in the final rejection refers to page

169, first full paragraph. However, as previously discussed, this portion of Schmandt has nothing to do with audio labels that represent services presented in an audio field through respective synthesize sound sources. The discussion in the Final Rejection of claims 13 and 33 refers to Figure 6 of Schmandt. However, as previously discussed, there is nothing in Figure 6 of Schmandt relating to audio labels that are used to represent services. Appellant does not understand the comment concerning claims 14 and 34 that news audio is a service that provides a label.

H. Schmandt does not disclose the requirement of claim 17, requiring an offset to be varied between an audio-field reference relative to which sound sources are positioned in an audio field and a presentation reference determined by a mounding configuration of audio output devices through which sound sources are synthesized. Since claims 18 and 19 depend on claim 17, Schmandt does not disclose claims 18 and 19.

To reject claims 17, upon which claims 18 and 19 depend, the Examiner relies on Figures 5 and 6 and the first full paragraph of page 169 of Schmandt. The final rejection alleges these portions of Schmandt disclose varying the rendering positions of the sound source by varying an offset between (a) an audio-field relative to which the sound sources are positioned in the audio field and (b) a presentation reference determined by a mounting configuration of audio output devices through which the sounds sources are synthesized. There is no disclosure in the relied upon portions of Schmandt of an offset, no less varying an offset. Further, there is no disclosure in the relied upon portion of Schmandt of varying an offset in accordance with (a) and (b). In

Schmandt, the positions of the sound sources are changed only by the use of the fish eye lens. There is no indication that an offset of a particular sound source occurs through the use of the fish eye lens. Presumably, the center of the source remains constant when the fish eye lens is employed. In such a case, no offset would occur.

I. Schmandt does not make obvious selecting a service as a result of a user speaking an audio label of a target service and using a speech recognizer to match the spoken label to stored audio labels, as dependent claims 4, 24, and 44 require.

The rejection of claims 4, 24 and 44 as being obvious as a result of Schmandt is incorrect because Schmandt has no disclosure of audio labels, no less a user speaking an audio label, as required by claim 4 or a means or arrangement for recognizing an audio label spoken by a user, as required by claims 24 and 44. Claims 24 and 44 further require the selections of claims 21 and 41 of the corresponding service to be as a result of the spoken audio label being recognized. Since Schmandt does not disclose selecting a service by recognizing an audio label, Schmandt does not make obvious selecting a service by recognizing audio label that is spoken by a user.

Claim 24 is also couched in means plus function language. The Examiner has made no attempt to show that any speech recognizer that Schmandt might employ is the same or equivalent to the speech recognizer applicant discloses in connection with Figure 18, and that was discussed in Section 5 of this brief.

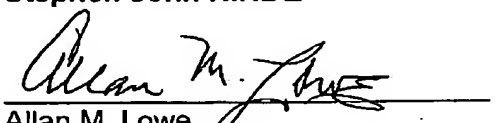
VII. Conclusion

Appellant has demonstrated that independent claims 1, 21 and 37 are not anticipated by Schmandt, the only reference relied on by the Examiner. Schmandt fails to disclose an audio user-interface method or apparatus in which the services are represented by audio labels, that are stored for each service to be represented. Schmand fails to disclose generating an audio field in which sound sources are synthesized at respective rendering positions to sound their associated service-representing audio labels. The Examiner has failed to attempt to establish a proper anticipation rejection of means plus function claims 21, 23 or 24, because he has not shown where Schmandt includes the structure set forth in appellants' specification or the equivalent thereof for the means plus function limitations of these claims. The Examiner has also failed to accurately indicate where Schmandt includes the requirements of dependent claims 3, 6, 7, 9, 11-14, 17-19, 23, 26, 27, 29 or 30-34.

Accordingly, reversal of the Final Rejection is in order.

Respectfully submitted,

Stephen John HINDE

By: 

Allan M. Lowe
Reg. No. 19,641

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400

Fort Collins, CO 80527-2400
Telephone: 703-684-1111
Facsimile: 970-898-0640
Date: August 16, 2006
AML/tal:mps

VIII. Claims Appendix

1. An audio user-interfacing method in which services are represented by audio labels presented in an audio field through respective synthesized sound sources, the method comprising:

(a) storing, for each service to be represented, service access data and data associating the service with at least one said sound source and specifying at least one audio label;

(b) generating an audio field in which said sound sources are synthesized at respective rendering positions to sound their associated service-representing audio labels and thereby present the user with a choice of services;

(c) selecting a service by indicating the selected service through its audible representation,

(d) modifying the audio-field layout of (i) the service-representing sound sources and/or (ii) what services are represented in the audio field.

2. A method according to claim 1, wherein step (c) includes the selecting and modifying steps being performed by a user of the method rotating and/or displacing the audio field to bring the sound source of a target service so the sound source lies in a predetermined selection direction.

3. A method according to claim 1, wherein step (c) includes moving an audio-cursor sound source in the audio field so the audio-cursor sound source is aligned with the sound source of a target service.

4. A method according to claim 1, wherein step (c) includes the user speaking the audio label of a target service, and using a speech recogniser to match, where possible, this spoken label to the stored audio labels.

5. A method according to claim 1, wherein the selection of a service in step (c) results in the service-representing sound sources being replaced by an audio interface to the service.

6. A method according to claim 1, wherein the access data of a said service is the path name on a local machine of a service executable file.

7. A method according to claim 1, wherein the access data of a said service is the address of a service resource on a remote machine to be accessed over a communications connection.

8. A method according to claim 1, wherein said services comprise one or more of the following service types: application software; a communication service; an

entertainment service; a database-based information resource; a file information resource; a transactional service; an augmented-reality service.

9. A method according to claim 1, wherein the rendering positions of the sound sources are specified in the audio field with at least two degrees of freedom.

10. A method according to claim 1, wherein at least one said audio label is a verbal service name or descriptor.

11. A method according to claim 1, wherein at least one said audio label is an audio feed from the service concerned.

12. A method according to claim 1, wherein at least one said audio label is a distinctive sound or sound sequence.

13. A method according to claim 1, wherein at least one said audio label is user specified.

14. A method according to claim 1, wherein at least one said audio label is provided by the corresponding service.

15. A method according to claim 1, wherein at least one service has on-going activity and provides notification of significant service-related events, these notifications being passed to the user in audible form through a said sound source associated with the service.

16. A method according to claim 1, wherein the rendering positions of said sound sources are specified relative to an audio-field reference, modifying the layout of the service-representing sound sources through the modification of the rendering positions of individual sound sources.

17. A method according to claim 1, including varying the rendering positions of said sound source by varying an offset between (a) an audio-field reference relative to which the sounds sources are positioned in the audio field, and (b) a presentation reference determined by a mounting configuration of audio output devices through which the sound sources are synthesised.

18. A method according to claim 17, wherein said offset is varied to stabilise the audio field relative to one of: a user's head; a user's body; a vehicle in which the user is travelling; the world; this stabilisation taking account of whether the audio

output devices are world, vehicle, body or head mounted, and, as appropriate, rotation of the user's head or body, or turning of the vehicle.

19. A method according to claim 17, wherein said offset is varied in response to user input via an input device.

21. Apparatus for providing an audio user interface in which services are represented by audio labels presented in an audio field through respective synthesized sound sources, the apparatus comprising:

- a memory for storing, for each service to be represented, service access data and data associating the service with at least one said sound source and specifying at least one audio label;

- rendering means for generating, through audio output devices, an audio field in which said sound sources are synthesized at respective rendering positions to provide sounds for their associated service-representing audio labels and thereby present the user with a choice of services;

- selection means for selecting a represented service by indicating the represented service through its audible representation; and

- user input means for enabling a user to modify the audio-field layout of the service-representing sound sources and/or what services are represented in the audio field.

22. Apparatus according to claim 21, wherein the selection means comprises means for rotating and/or displacing the audio field to bring the sound source of a target service to lie in a predetermined selection direction, and means for inputting a select command to select a service whose sound source is aligned with said selection direction.

23. Apparatus according to claim 21, wherein the selection means comprises means for moving an audio-cursor sound source in the audio field to align the audio-cursor sound source with the sound source of a target service, and means for inputting a select command to select a service with which the sound source is aligned.

24. Apparatus according to claim 21, wherein the selection means comprises speech input means for recognising an audio label spoken by the user and selecting the corresponding service.

25. Apparatus according to claim 21, further comprising means arranged to be responsive to the selection of a service by the selection means to replace the audio field of service-representing sound sources with an audio interface to the selected service.

26. Apparatus according to claim 21, wherein the access data of a said service includes the path name on a local machine of a service executable file.

27. Apparatus according to claim 21, wherein the access data of a said service includes the address of a service resource on a remote machine to be accessed over a communications connection.

28. Apparatus according to claim 21, wherein said services comprise one or more of the following service types: application software; a communication service; an entertainment service; a database-based information resource; a file information resource; a transactional service; an augmented-reality service.

30. Apparatus according to claim 21, wherein at least one said audio label includes a verbal service name or descriptor.

31. Apparatus according to claim 21, wherein at least one said audio label includes an audio feed from the service concerned.

32. Apparatus according to claim 21, wherein at least one said audio label includes a distinctive sound or sound sequence.

33. A method according to claim 21, further comprising means for enabling a user to specify said audio labels.

34. A method according to claim 21, further comprising means for receiving audio-label specifying data from the corresponding service and storing it in said memory.

35. Apparatus according to claim 21, wherein at least one service has on-going activity and the apparatus further comprises means for receiving, from that service, notification of significant service-related events, and for causing these notifications to be output to the user in audible form through a said sound source associated with the service.

36. Apparatus according to claim 21, wherein the rendering positions of said sound sources are specified relative to an audio-field reference, the said user input means is operative to modify the layout of the service-representing sound sources through the modification of the rendering positions of individual sound sources.

40. Apparatus according to claim 21, further comprising means for enabling a user to modify which services are represented in the audio field.

41. Apparatus for providing an audio user interface in which services are represented by audio labels presented in an audio field through respective synthesized sound sources, the apparatus comprising: a memory for storing, for each service to be represented, service access data and data associating the service with at least one said sound source and specifying at least one audio label; a rendering subsystem arranged to generate, through audio output devices, an audio field in which said sound sources are adapted to be synthesized at respective rendering positions to provide sounds for their associated service-representing audio labels; a selection arrangement operative to select a represented service by identifying it through at least one of its sound source and audio label; and user input functionality for enabling a user to modify the audio-field layout of the service-representing sound sources and/or what services are represented in the audio field.

42. Apparatus according to claim 41, wherein the selection arrangement comprises an arrangement for rotating and/or displacing the audio field to bring the sound source of a target service to lie in a predetermined selection direction, and an arrangement for inputting a select command to select a service whose sound source is aligned with said selection direction.

43. Apparatus according to claim 41, wherein the selection arrangement comprises an arrangement for moving an audio-cursor sound source in the audio field

to align it with the sound source of a target service, and an arrangement for inputting a select command to select a service with which the sound source is aligned.

44. Apparatus according to claim 41, wherein the selection means comprises a speech input subsystem operative to recognise an audio label spoken by the user and select the corresponding service.

45. Apparatus according to claim 41, further comprising functionality responsive to the selection of a service by the selection arrangement to replace the audio field of service-representing sound sources with an audio interface to the selected service.

46. A method according to claim 1, wherein step (d) includes the user modifying which services are represented in the audio field.

47. A method according to claim 1, wherein step (d) includes the user modifying the service representing sound sources.

48. A method according to claim 47, wherein step (d) includes the user modifying the service representing sound sources.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.